

We claim:

1. A fire retardant composition comprising a material which retains water and produces carbon dioxide upon exposure to heat, at least one rheology modifying agent, and optionally a synthetic additive, wherein the material  
5 which produces carbon dioxide comprises urea, urea derivatives or mixtures thereof.
2. The fire retardant composition of claim 1, wherein the material which produces carbon dioxide comprises at least one (hydroxyalkyl)urea.  
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3. The fire retardant composition of claim 2, wherein the (hydroxyalkyl)urea comprises mono(hydroxyethyl)urea, N,N-bis(2-hydroxyethyl)urea, tetrakis(2-hydroxyethyl)urea, tris(2-hydroxyethyl)urea, N,N'-bis(2-hydroxyethyl)urea, N,N'-(3-hydroxypropyl)urea, N,N'-bis(4-hydroxybutyl)urea, 2-urea-2-ethyl-1,3-  
15 propanediol, saccharide ureas, 4,5-dihydroxyethylene urea, or mixtures thereof.
4. The fire retardant composition of claim 3, wherein the (hydroxyalkyl)urea is N,N-bis(2-hydroxyethyl)urea.  
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5. The fire retardant composition of claim 3, wherein the rheology modifying agent comprises a copolymer or homopolymer containing a carboxyl group and is capable of building viscosity above pH 6.5.
- 25 6. The fire retardant of claim 5, wherein the rheology modifying agent comprises acrylic emulsion thickeners, potato starch, starch modified thickeners, polyurethanes, alkali swellable emulsion thickeners, poly(acrylic)

acid, poly(methacrylic) acid, copolymers of acrylic acid and methacrylic acid, hydrophobically modified alkali swellable emulsions which have a pH adjusted to above 6.5.

5     7. The fire retardant composition of claim 6, wherein the hydrophobically modified alkali swellable emulsions are selected from the group consisting of acrylates/stearath – 20 itaconate copolymer, and acrylates/ceteth – 20 itaconate copolymer and mixtures thereof.

10    8. The fire retardant composition of claim 6, wherein the composition is in the form of a gel.

9. The fire retardant composition of claim 1, wherein the synthetic additive comprises crosslinked compositions, polyvinyl alcohol, or mixtures thereof.

15     10. A fire retardant foam comprising a material which retains water and produces carbon dioxide upon exposure to heat, a rheology modifying agent containing carboxyl groups, a foam generator, and optionally a synthetic additive, wherein the material which produces carbon dioxide comprises  
20     urea, urea derivatives, or mixtures thereof.

11. The fire retardant foam of claim 10, wherein the material which produces carbon dioxide comprises a (hydroxyalkyl)urea.

25     12. The fire retardant foam of claim 11, wherein the (hydroxyalkyl)urea comprises mono(hydroxyethyl)urea, N,N-bis(2-hydroxyethyl)urea, tetrakis(2-hydroxyethyl)urea, tris(2-hydroxyethyl)urea, N,N'-bis(2-hydroxyethyl)urea,

N,N'-(3-hydroxypropyl)urea, N,N'-bis(4-hydroxybutyl)urea, 2-urea-2-ethyl-1,3-propanediol, saccharide ureas, 4,5-dihydroxyethylene urea, or mixtures thereof.

5     13. The fire retardant foam of claim 10, wherein the (hydroxyalkyl)urea is N,N-bis(2-hydroxyethyl)urea.

14. The fire retardant composition of claim 10, wherein the rheology modifying agent comprises a copolymer or homopolymer containing a  
10     carboxyl group and is capable of building viscosity above pH 6.5.

15. The fire retardant of claim 14, wherein the rheology modifying agent comprises acrylic emulsion thickeners, potato starch, starch modified thickeners, polyurethanes, alkali swellable emulsion thickeners, poly(acrylic  
15     acid, poly(methacrylic) acid, copolymers of acrylic acid and methacrylic acid, hydrophobically modified alkali swellable emulsions which have a pH adjusted to above 6.5.

16. The fire retardant composition of claim 15, wherein the hydrophobically  
20     modified alkali swellable emulsions are selected from the group consisting of acrylates/stearath – 20 itaconate copolymer, and acrylates/ceteth – 20 itaconate copolymer and mixtures thereof.

17. The fire retardant foam of claim 10, wherein the foam generator is  
25     selected from the group consisting of sodium bicarbonate and citric acid, octenyl succinic anhydride modified starches, dextrans, or gums, dodecynl succinic anhydride modified starches, dextrans, or gums or mixtures thereof.

18. The fire retardant composition of claim 10, wherein the synthetic additive comprises crosslinked compositions, polyvinyl alcohol, or mixtures thereof.
- 5 19. A fire retardant gel comprising a rheology thickener in an aqueous base having a pH of no less than 6.5.
20. The fire retardant gel of claim 19 wherein the rheology modifying agent comprises acrylic emulsion thickeners, potato starch starch modified  
10 thickeners, alkali swellable emulsion thickeners, poly(acrylic) acid, poly(methacrylic) acid, polyurethanes, copolymers of acrylic acid and methacrylic acid, hydrophobically modified alkali swellable emulsions which have a pH adjusted to above 6.5.
- 15 21. The fire retardant composition of claim 20, wherein the hydrophobically modified alkali swellable emulsions are selected from the group consisting of acrylates/stearath – 20 itaconate copolymer, and acrylates/ceteth – 20 itaconate copolymer and mixtures thereof.
- 20 22. A method for retarding the spread of fire comprising the step of coating an object with a composition comprising a material which retains water and produces carbon dioxide upon exposure to heat, a rheology modifying agent containing carboxyl groups and, optionally a foam generator, wherein the material which produces carbon dioxide comprises urea, urea derivatives, or  
25 mixtures thereof.